

PTOLEMUS Consulting Group

Insurance Telematics Study

The global reference report on Pay As You Drive



July 2012 - Strictly confidential

Who we are

PTOLEMUS Consulting Group

- **The 1st international strategy consulting firm specialized in telematics, location-based services & mobility**
- **Strategy combined with real industry expertise and operational experience**
- **A focus on achieving results for our clients**
- **Close links with the mobility ecosystem**
 - Advisory Board Member of EENA⁽¹⁾
 - Member of ERTICO's⁽²⁾ eSafety Forum and eCall HeERO Observers Group
 - Close connections to national ITS organisations, ACEA⁽³⁾, ASECAP⁽⁴⁾, GSMA⁽⁵⁾, etc.
 - Speakers at most leading industry events & conferences
 - Regular contributor to Telematics Update
 - Steering Committee Member of Mobile Monday (Brussels)



from Ptolemy, the Egyptian savant who built the 1st map of the world in the 2nd century

PTOLEMUS is the first management consulting firm focused on telematics and geolocation

Our consulting services

Strategy definition

New market entry, business plan development, board coaching and support

Evaluation of investment

Strategic due diligence, market assessment, feasibility studies

Procurement strategy

Specification of requirements, launch of tenders, supplier negotiation & selection

Innovation management

Product & services development, roadmap definition, project management & launch, patent strategy

Business development

Partnership strategies, response to RFPs, lobbying

Implementation

Project & programme management, risk analysis & mitigation strategy

Our fields of expertise

Mobile content and social networking

Application stores, crowd-sourcing, etc.

Navigation & location-based services

Maps, traffic, fuel prices, speed cameras, weather, parking, etc.

Usage-based charging

PAYD / PHYD insurance, Road User Charging, PAYD car leasing & rental

Telematics & Intelligent Transport Systems

Connected car, tracking, fleet management, eCall, bCall, Stolen Vehicle Recovery, Car As A Service, connected train, etc.

Positioning / Location enablement

M2M & connectivity

We have acquired substantial experience in helping all players in the *geo-connected mobility* ecosystem

Telecom operators



OEMs & telematics vendors



Content & application providers



Telecom infrastructure providers



PTOLEMUS Consulting Group

- Partners in Brussels, Paris, Munich, Milan and Boston
- +50 years of experience in mobile
- +100 years of experience in telematics

ITS operators



Positioning solution providers



Insurers & assistance providers

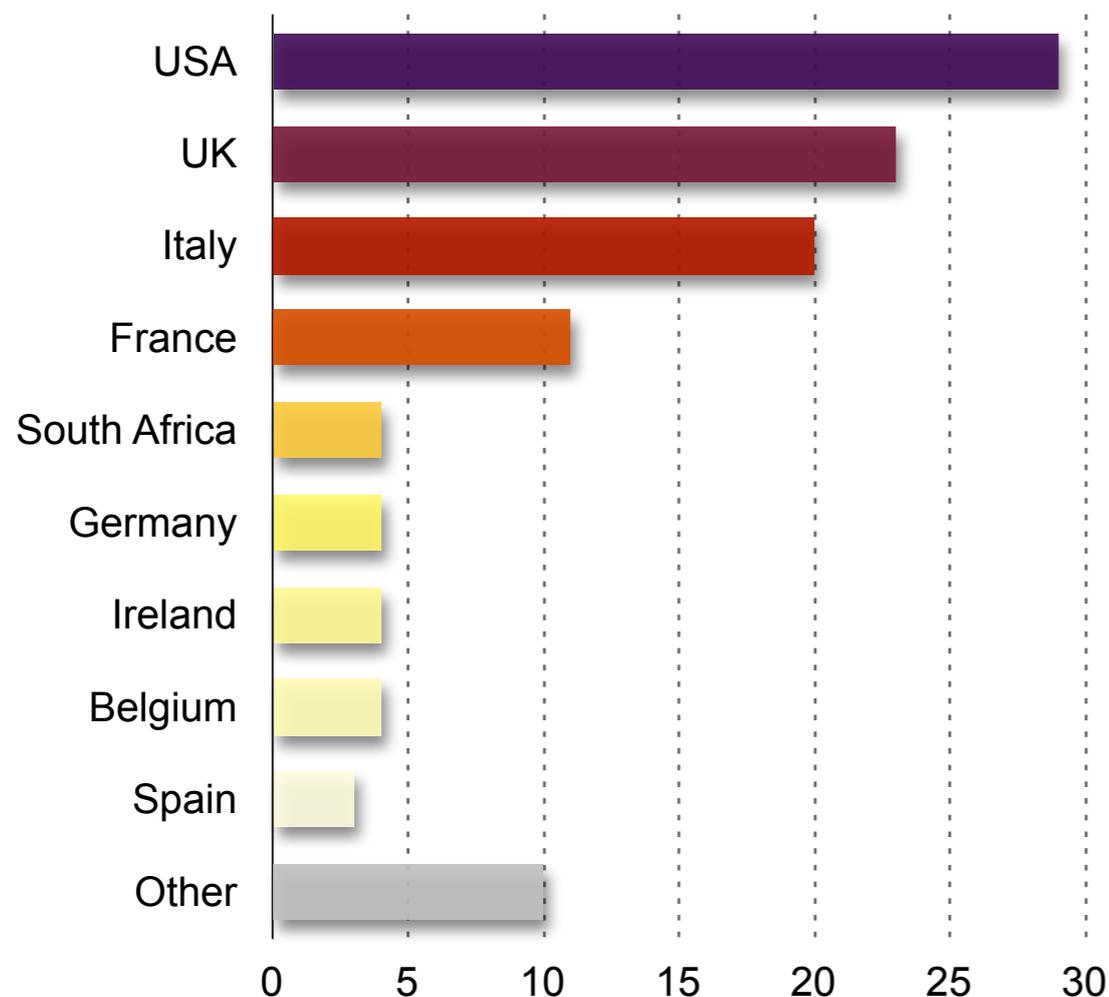


Financiers



Insurers are becoming more mature about PAYD

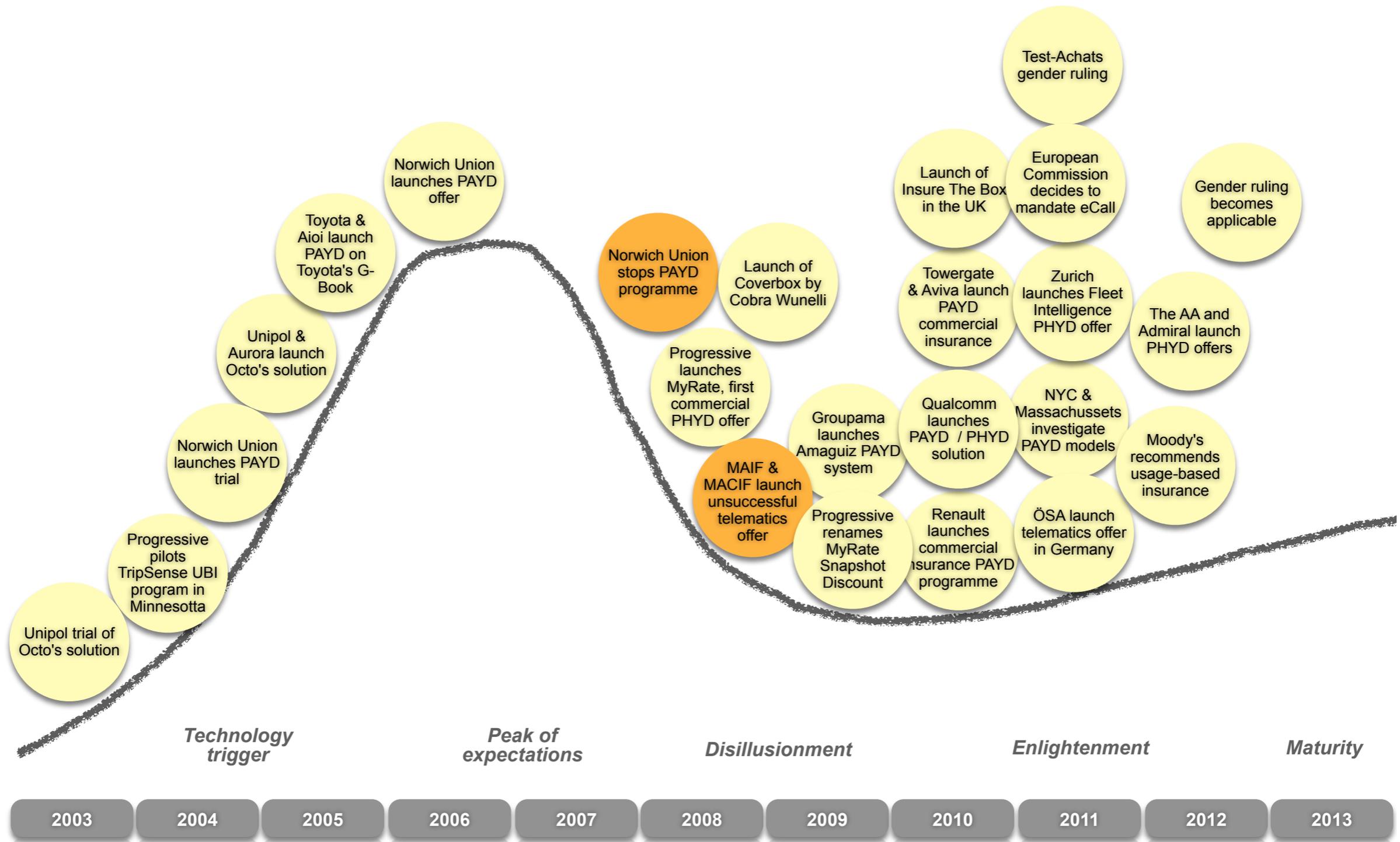
PAYD trials & launches globally



PAYD has passed the trial phase

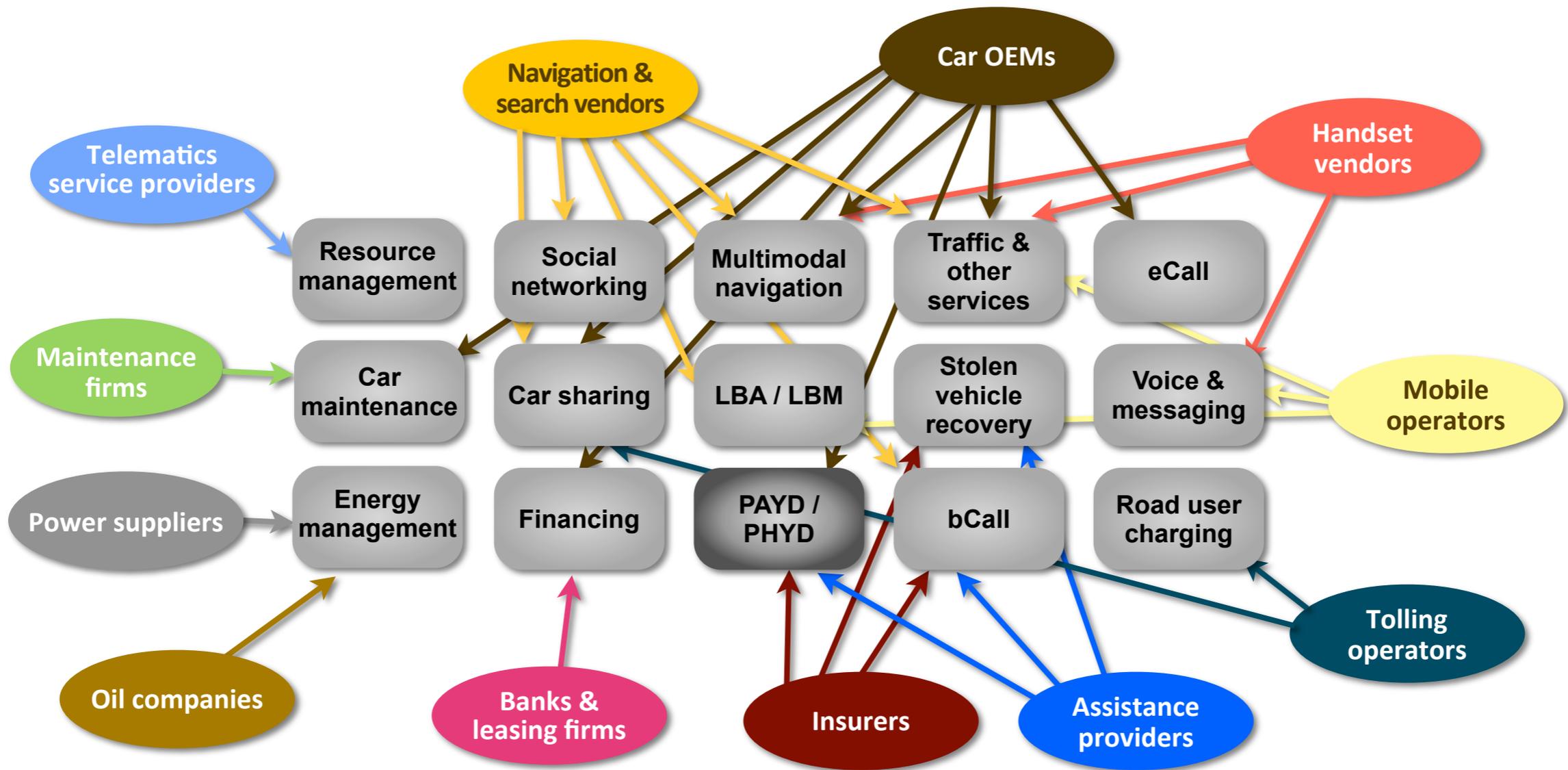
- 94 trials worldwide (67 in Europe)
- 54 commercial launches (40 in Europe)
- **Success stories in multiple countries**, notably Italy (Unipol), Spain (Mapfre), France (Groupama), the UK (Coverbox), Austria (Uniqa) and the US (Progressive)
- Overall, we estimate **PAYD-equipped vehicles at over 2 million** (worldwide)

In our view, the time has come for insurance telematics

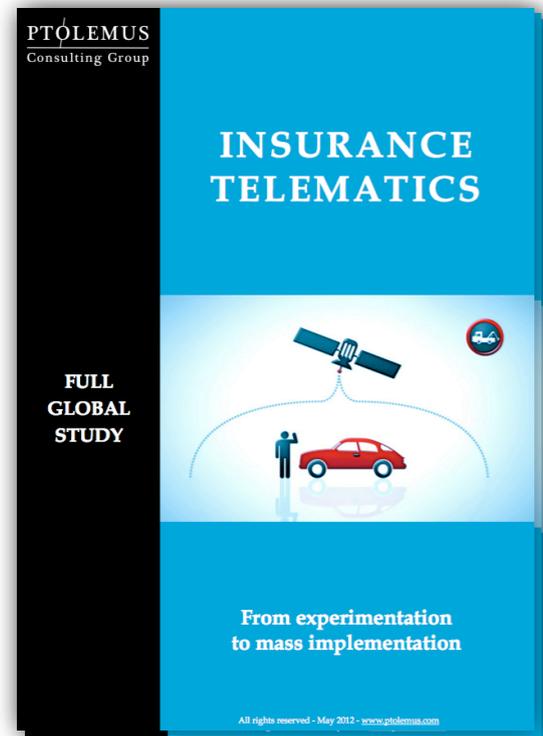


Connectivity is changing everything - Numerous players will be tempted to offer PAYD insurance

Connected car services



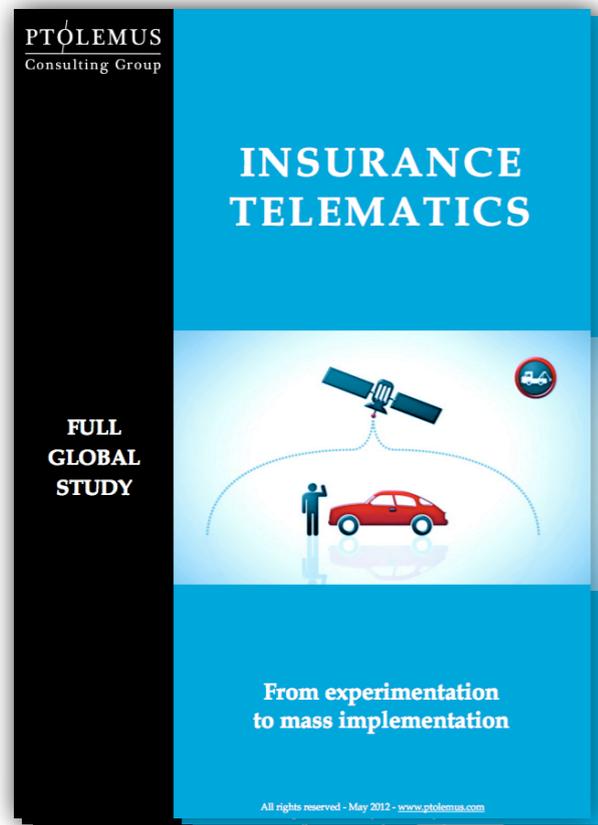
Our Insurance Telematics study is the most comprehensive report written on the subject



More than a research study, a real strategic market analysis

- **410 pages of analysis on the PAYD / PHYD market based on**
 - 83 interviews in 18 countries
 - 230 figures (charts, tables...)
 - 2 years of research
 - Our experience & vision of the ecosystem incl. OEMs and TSPs
- **Case studies & learnings** from ALD Automotive, Amaguiz, Coverbox, Discovery Insure, GM OnStar, Hollard Insurance, Insurethebox, Liberty Mutual, MAIF-MACIF, Norwich Union, Octo Telematics, Progressive, Solly Azar, State Farm, Unipol, Uniqa, Zurich
- **A handbook of suppliers' solutions** including our own evaluation & ranking
- **10-year market forecasts**
 - Country's readiness to telematics
 - Country forecasts for the US, Italy, the UK, France, Germany and Russia
 - Bottom-up estimates of the number of policies for each insurer in the US, the EU and in South Africa
- **Insurer's telematics market model results in 4 markets***
- A complete set of **recommendations** to underwriters, TSPs, OEMs, MNOs and governments
- A **strategic analysis of the value chain evolution** including
 - The impact of eCall
 - The impact of the smartphone
 - The effects of the gender ruling

This study has been written by strategists with decades of experience of telematics, automotive & mobility



More than a research study, a real strategic market analysis

Frederic Bruneteau, Managing Director, Brussels (fbuneteau@ptolemus.com)



Mr. Bruneteau founded the PTOLEMUS Consulting Group on the conviction that pervasive location and connectivity would revolutionize the business of mobility. He has 17 years of experience in 12 countries with companies such as TomTom, SFR, Vodafone, Arthur D. Little and BNP Paribas.

He has performed several insurance telematics assignments, notably the due diligence of Octo Telematics. He also chaired the latest Insurance Telematics conference in London and Fleet & Asset Management Conference in Amsterdam.

Olivier Bourhis, Managing Partner, Paris (obourhis@ptolemus.com)



Olivier Bourhis has accumulated over 20 years of experience across the globe in strategy, business development, marketing and sales.

Before PTOLEMUS, Olivier held international marketing and business development functions with PSA Peugeot Citroën, Valeo, Cable & Wireless and TeleDanmark Group (TDC). He has led a pan-European review of the European PAYD insurance market.

He also chaired the latest Telematics Munich conference.

Sergio Tusa, Associate Partner, Milan (stusa@ptolemus.com)



Sergio Tusa has gained over 20 years of experience in the telematics, location-based services and automotive domains.

Before PTOLEMUS, Sergio held management responsibilities with Magneti Marelli (Fiat Group), Cobra Automotive, Nokia, Tele Atlas and Philips. He also created and led Geonext, the first LBS and fleet management service provider in Italy.

He has led several insurance telematics and stolen vehicle recovery projects, for customers such as Ferrari, Fiat and Renault/Volvo Trucks.

We have interviewed over 80 companies in 18 countries including 30 insurers

Organisation	Country
Achmea	Netherlands
Airmax Group	
ALD Automotive	F
Allianz	F
Allianz	G
Allianz	
Amadeus Capital Partners	
Amaguiz (Groupama)	F
Aplicom	F
Arval	F
Aviva	
Axa	B
Axa Assistance	F
Bird & Bird	F
Cesar Satellite	F
CNIL	F

Organisation	Country
Cobra Automotive	France
Continental	
Covea	
Coverbox	
Crédit Mutuel	
Cybit	
Daimler Insurance Services	
ERTICO - ITS Europe	
European Commission	
Generali	
Generali Group	
Greenroad Technologies	
Hughes Telematics	
ING	
Lysanda	
MACIF	

Organisation	Country
MAIF	France
Masternaut	
Metaskil	
Michelin	
Mobile Devices	
Navteq	
Norton Rose	
Octo Telematics	
Qualcomm Enterprise Services	
SAP	
Scope Technologies	
Sensomatix	
Skymeter	
Standard & Poors	
Stok Nederland	
Telit	

Organisation	Country
Telogis	USA
Texa	Italy
The Co-operative Insurance	UK
TomTom Business Solutions	UK
Touring	Belgium
Toyota	Belgium
Trimble MRM	UK
Uniq	Austria
Vivium / P&V	Belgium
Vodafone	UK
Wireless Car	Sweden
Wunelli	UK
Young Marmalade	UK
Zurich Financial Services	France
Zurich Fleet Services	UK
Zurich	Italy
Zurich	UK

410 pages of facts, figures, examples, case studies, forecasts and recommendations

LIST OF FIGURES

I. OVERVIEW OF THE PRESENT ENVIRONMENT

Overview of insurance telematics

- What is insurance telematics?
- UBI vs. insurance telematics
- SWOT analysis of the 3 main rating models
- A European perspective on insurance telematics

Key features of the motor insurance market

- A maturing business
- Increasing churn
- Rising claim costs
- Limited investment income
- The advent of online distribution
- Sustainability of the mutualisation model

II. TELEMATICS-ENABLED INSURANCE: THE NEXT STAGE?

Telematics is now an impending necessity

- The benefits of telematics
- Telematics will come from competition

Why telematics will grow faster than ever

- Technological drivers
- Economic drivers
- Regulatory drivers

The mystery of PAYD – why it has not taken off yet

- Challenges for insurers
- Challenges for consumers
- What this means for the future

III. THE INEVITABLE INSURANCE REVOLUTION

What has the industry learned?

- Learnings from the pioneering insurers
- Learnings from Italy's telematics take-off
- Synthesis of the learnings from the past

Reinventing the motor insurer

- Building a comprehensive customer value proposition
- Becoming an ISP (Insurance Service Provider)
- Designing a privacy-enabled service
- Raising the awareness and education of commercial channels
- Building a customer-centric service
- Fastening the time-to-market
- Building closer relationships with automobile manufacturers

Welcome to the kingdom of big data

- Tell me the (ground) truth!
- The challenges of big data
- Data to the people
- Will data become a barrier to entry?

The impact of telematics on risks

- The 3 miracles of telematics
- The benefits of a driver-behaviour programme
- Leveraging telematics data on the existing book
- Using telematics-based pricing to reduce risks

IV. BUILDING THE TECHNOLOGY SOLUTION

Defining its technology strategy

- Selecting the technology
- Defining a purchasing strategy
- The key selection criteria
- The future integration of telematics into the IT system

Selecting its technology supplier(s)

- The landscape of suppliers
- Handbook of suppliers
- Our evaluation of suppliers

What are the key supply issues?

- How important is the hardware?
- What is the winning hardware combination?
- What are the new differentiating features?
- Will we head towards leasing models for telematics hardware?
- What are the specific supply issues for commercial insurers?

V. STRATEGIC EVOLUTION OF THE INDUSTRY

The telematics opportunity

- The insurance telematics value chain
- The global telematics battlefield

The Original Equipment Market

- OnStar showed the way
- The growing interest of OEMs in insurance
- The nascent involvement of OEMs in insurance telematics
- The challenges
- Competition issues
- TSPs on board?

The aftermarket

- A changing value chain
- Movements in the telematics industry

Embedded or installed?

- State Farm, the aftermarket against the OEM
- Evolution of the European market

VI. THE INSURANCE TELEMATICS MARKET POTENTIAL

The business case for mass implementation

- The typical business case for an insurer
- Country operator business case studies

Is the market mature for telematics?

- Readiness of European markets to telematics
- Readiness of other markets to telematics
- The changing face of insurance telematics

The personal line insurance market potential

- Current market size
- Expected growth
- The importance of Value Added Services

The commercial insurance market potential

- Current market size
- Expected growth

PAYD / PHYD, a major opportunity for insurers

The market potential for third parties

- The market opportunity for Telematic Service Providers
- The market opportunity for Telematics Technology Providers
- The market opportunity for mobile operators

VII. CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Recommendations to insurers

- Finding the right value proposition for consumers
- Multiple deployment strategies
- Business model
- Why now?

Recommendations to governments and regulators

Recommendations to telematic solution providers

Recommendation to automotive OEMs and suppliers

Recommendations to mobile operators

Over 230 charts, diagrammes, illustrations and tables

Customer lifetime cash flows for the insurer - UK

The telematics customer NPV explained - UK

£
900
600
300

Figure: Estimated premium loss by rating factor in the US market (2010)

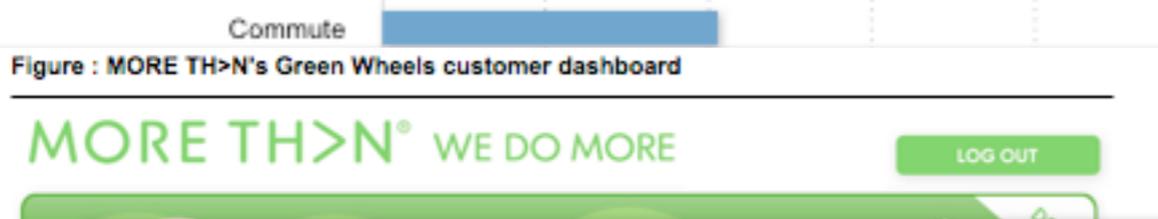
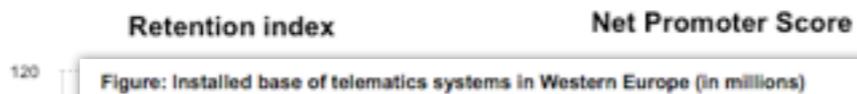


Figure : MORE TH>N's Green Wheels customer dashboard

Figure : Progressive notices significant improvements in customer retention and satisfaction through telematics



Notes:
• Retention
• The Net represent colleague

Source:

Source: Prog

Figure: Installed base of telematics systems in Western Europe (in millions)



Note: Does not include smartphone-based systems
Source: PTOLEMUS

Figure : Evolution of Progressive's PAYD on-board devices



Source: PTOLEMUS

Figure : Learnings for insurers

Insurer	Factors of failure	Success factors	Customers acquired per year
	<ul style="list-style-type: none"> ★ Upfront fees for the device and the installation ★ Complex tariffing scheme 	<ul style="list-style-type: none"> ★ Technical trial 	

Figure : Motor insurers have a relatively limited customer relationship today



Figure : From the seed to the fruit - Typical telematics timeline for an incumbent insurer



Figure : MAIF and MACIF, the first safety-centric offering

A full but complex technical solution

- Selected 3 main partners
 - Telematics solution provider: Masternaut
 - Connectivity provider: Bouygues Telecom
 - Assistance partner: Inter



EMUS

The report includes the evaluation of 60 suppliers globally and the presentation of 13 solutions in detail

Global rankings of telematics suppliers

	Personal line	Commercial line
Europe	Mobile Devices	Aplicom
North America	Danlaw	Mobile Devices
Other continents	Scope	Mobile Devices

The most complete analysis of technology

- 70-page analysis of technology solutions and purchasing strategies
- 100-factor purchasing checklist
- Market shares of suppliers globally
- An analysis of the differentiating features and services
- A list of 40 applicable patents
- OBD vs. OBU

13 supplier solutions detailed

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Section IV - Building the technology solution

QUALCOMM

Qualcomm Enterprise Services is a unit of Qualcomm, Inc., a global technology player with revenues of \$13 billion.

Qualcomm Enterprise Services has 20 years of experience as a TSP and more than 1.5 million embedded active terminals. It has over 2,000 customers in 39 countries. It operates end-to-end services as well as services for OEMs such as fleet.

It has entered the insurance information market in 2010. Its solution includes (RVD, PVID), crash management services and value added services for the end-user.

Life cycle	Consumer & commercial markets	Price	+4750
Type	Fleet dash box	Installation	Professional
Dimensions (cm)	15.8 x 8.5 x 3.5	Height (cm)	N/A
Supported	N/A	Output connectors	K-line, Serial, USB, CAN
Processor	N/A	RAM	N/A
Transmission technology	2G / 3G	Positioning technology	GPS
Battery	✓	Battery capacity	N/A
Software platform	Proprietary	Open APIs	N/A
CAN bus connector	✓	OBD connector	✓
Remote updates	✓	Location data	Collected
Markets	Hardware (OEMs)	Power consumption (mA)	N/A

Rating factors measured

Installation, training, lateral movement, duration of trip, time of the day, distance, road type, toll time and global toll cycles, etc.

Value added services supported

Route Tracking, parental monitoring tools, eco-driving, driving score and style analysis

Services provided to the insurer

✓	✓	✓	✓
Installation	✓	Installation	✓
Data analysis	✓	Driver feedback	✓
SLA	✓	Other	Geofencing, 2010 crash analysis and reconstruction

Customer technical support, repair / OBU replacement, 24/7 customer care center, hotline in 3 languages

Customer references

Bankersy, Group Waco, Hellen, Hermosa, Laredo, Neco, Nansen, Sorenson, Phone Express, Transportes Becker, W&B Beta

Zurich Fleet Intelligence

Summary

Strengths	Weaknesses
<ul style="list-style-type: none"> • High level of services provided to the insurer, including 24/7 customer care center and its own products portfolio • Installation services are provided • Long experience of handling major accounts in fleet management • Strong presence in the fleet and automotive domains (notably for OEMs) 	<ul style="list-style-type: none"> • Limited experience with insurers

Benefit from our in-depth market forecasts of UBI

- 10 year (2010-2020) market forecasts
 - Built bottom up (over 1 600 rows)
 - Using latest available market figures
- A comprehensive analysis & decision-making tool
 - 4 technologies (embedded OBUs, aftermarket OBUs, OBD, smartphones)
 - 7 areas: USA, France, Germany, Italy, UK, rest of EU, Russia, Rest of Europe
 - 2 channels (aftermarket / OEM)
 - 2 markets: personal line / commercial line
- Market size (volumes & revenues) for insurers, TSPs, TTPs, OEMs and MNOs



Extract pages of the report

II. TELEMATICS INSURANCE: THE NEXT STAGE?

A. Telematics is now an impending necessity

1. The benefits of telematics

The current motor insurance environment is difficult at best due to the limitations of the mutualisation model. In such a situation, it becomes necessary for insurers to look at alternative solutions.

Telematics offers insurers the opportunity to revolutionise the way in which motor insurance is carried out. Through telematics, motor insurance can potentially change from a burden that is discharged annually to a subscription service where customers pay for insurance based on their usage much like they pay for other utilities such as electricity or mobile telephony.

We compare in the table below the benefits and drawbacks of traditional motor insurance schemes with telematics-based schemes.

Figure : Comparison between traditional motor insurance and telematics-based insurance

	Standard insurance	Telematics-enabled insurance
Advantages	<ul style="list-style-type: none"> • Simplicity of the model for customers and channels • Level of premium is known in advance 	<ul style="list-style-type: none"> • Ability to adapt premium to actual risk level • Ability to detect numerous cases of fraud • Stolen vehicle recovery capability • Ability to provide feedback to driver on his / her driving habits • Incentive on reducing risk of accidents • Recurring relationship between insurer and customer • Ability to reduce fuel consumption • Crash post-accident analysis • Ability to improve actuarial models
Disadvantages	<ul style="list-style-type: none"> • Takes primarily into account statistical risk factors rather than individual factors • Creates adverse selection by attracting high mileage drivers, high risk drivers • Limited ability to control creates an incentive to fraud • Unability for the insurer to dynamically adjust the premium (only the year after) 	<ul style="list-style-type: none"> • Required installation of an on-board device • Cost of the device • Uncertainty on the level of the premium • Impact on driver's privacy

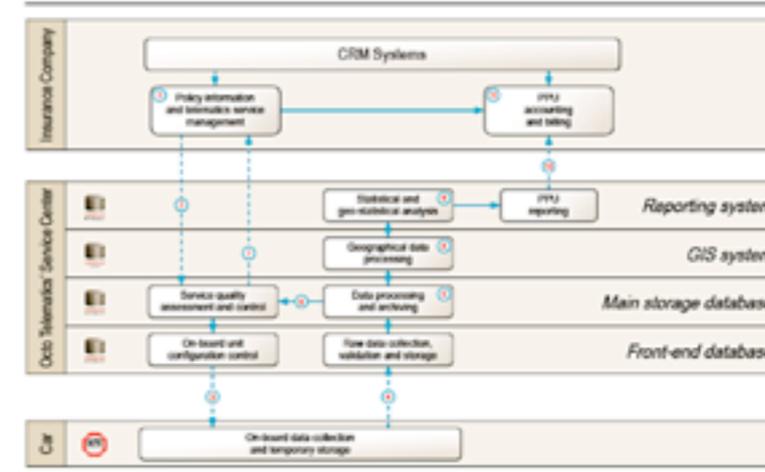
Source: PTOLEMUS

Telematics brings numerous advantages to insurers and truly revolutionises several dimensions of the motor insurance business.

- A reporting system that interfaces with the insurer's own pay-per-use (PPL) tariffing system.

The diagram below details Octo's back-office architecture.

Figure : Octo Telematics' back-office architecture



Source: Oracle

In addition, for each new insurance customer, the IT system needs to control a number of other key processes, notably

- The device provisioning, SIM-provisioning and fitting, connectivity activation and testing process,
- The customer activation process, which is dependent on the proper installation of the on-board device in the customers' vehicle by a certified workshop,
- The customer des-activation process, which can be linked to the de-commissioning of the black box.

This is again something that is done by Octo Telematics. In other words, Octo's solution avoid the need for each insurer to create its own telematics back-office system. Insurers benefit from Octo's experience curve and economies of scale. Therefore the step is lower than many other telematics suppliers.

This is very relevant for this initial stage of the market growth and it largely explains Octo's success so far. We expect an increasing number of telematics players to offer such packaged offerings, separately or together with integrators.

Extract pages of the report

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Figure : Uniqa SafeLine, the offer

- Installation fee of €90, now decreased to €69 (which is often waived in the context of promotional offers)
- Monthly charges of €9.50 including device costs
- Minimum duration of 36 months
- 5% discount on MTPL premium and 50% on *Auto & Frei Unfallversicherung* (car-related disability insurance) premium
- Discounted premiums based on mileage: up to 25% discount for low-mileage users (environmental bonus)



Source: Uniqa

However, the product also offers important economic advantages. The premium is based on the mileage and the types of roads taken. For example, driving on the motorway will result in a lower premium than on the road network.

The aim is ensure that both light and heavy drivers benefit from the offer. Light drivers can receive a discount of up to 25% on their liability and comprehensive premium; heavy drivers, on the other hand, enjoy a safety discount on comprehensive and automotive casualty insurance.

Customers can view the collected data at the customer portal myUNIQA.at, which also represents a valuable information source on their annual driving distance and CO₂ footprint.

In a relatively small market, Uniqa has reached over 40,000 active customers, which makes it a relative success. The company has now also introduced the SafeLine product in Hungary as well.

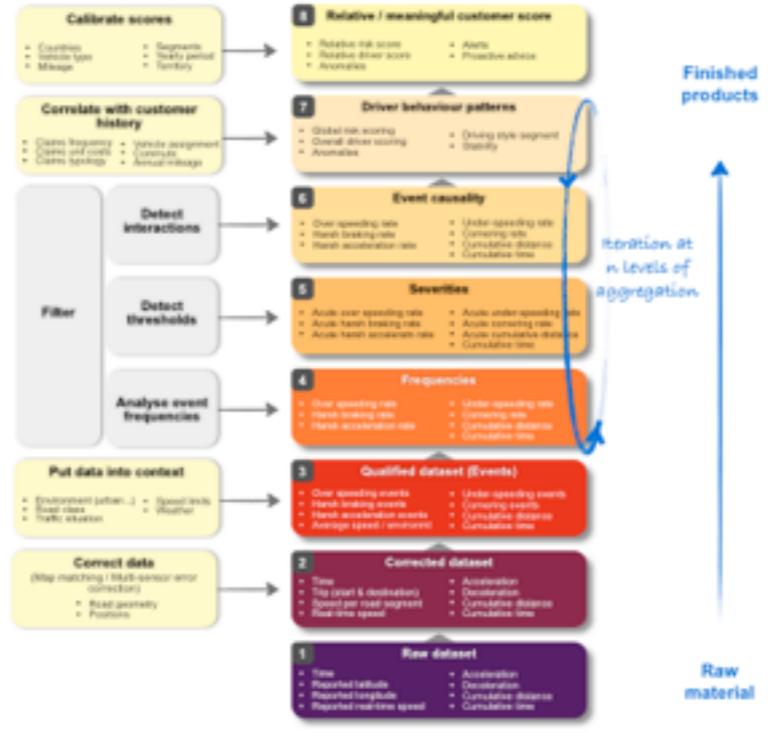
In our opinion, this success is due to a number of factors. First, Uniqa benefits from the fact that it offers a differentiated proposition in a relatively commoditised market. It is the only insurance provider with a safety and security services package in Austria at the moment.

Secondly, the services were priced relatively affordably (less than half the charges proposed by MAIF/MACIF for similar services in France). They were also combined with the ability to save premiums by way of a cheaper quote and a mileage discount. As a result, the package seems to offer an attractive value proposition to consumers.

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Figure : Transforming copper into gold - From raw data to meaningful KPIs



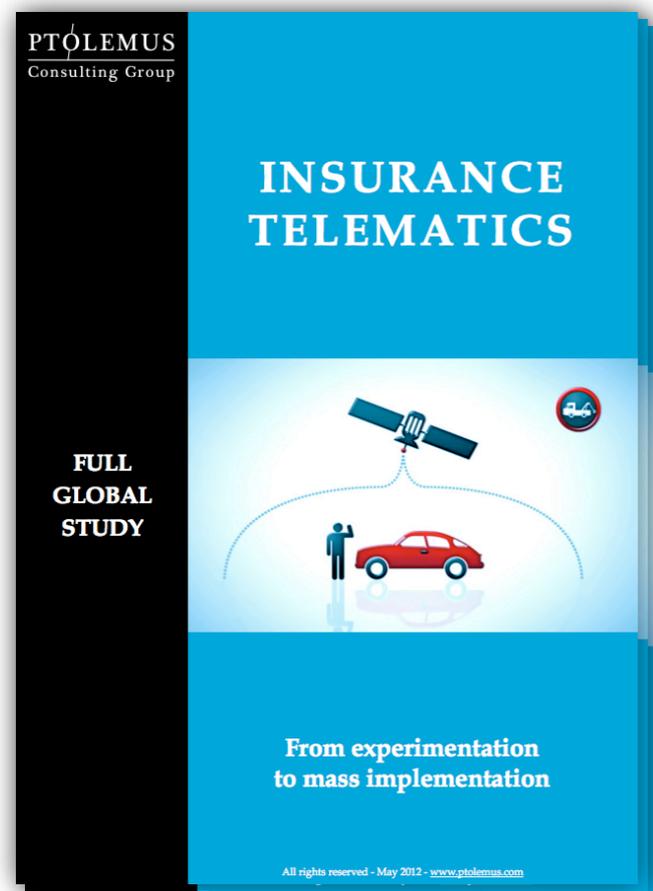
Source: PTOLEMUS

Last but not least, the insurer will need to estimate the impact of its adjusted pricing measures on the customer behaviour:

- Does the customer change its driving behaviour?
- How big and lasting is this change?
- What is its impact on risks?

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Our report is an electronic document that can be read by the whole company



More than a research study, a real strategic market analysis

STUDIES	Section	Full Study	Full Study with 10-year market forecasts
Contents	<ul style="list-style-type: none"> • One chosen section of the report • Electronic version (pdf format, password protected) 	<ul style="list-style-type: none"> • 405 pages • Electronic version (pdf format, password protected) 	<ul style="list-style-type: none"> • 405 pages report • Electronic version (pdf format, password protected) • Excel market forecasts with graphs (password protected)
Company-wide licence	<p>€ 1 995 <i>Approx. \$2 515</i></p>	<p>€ 4 995 <i>Approx. \$6 995</i></p>	<p>€ 5 995 <i>Approx. \$7 600</i></p>
Single-person licence (Paper version)	<p>€ 1 295 <i>Approx. \$1 635</i></p>	<p>€ 2 995 <i>Approx. \$3 780</i></p>	<p>€ 3 595 <i>Approx. \$4 535</i></p>

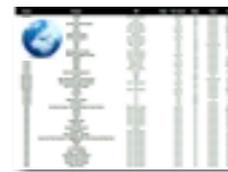
PTOLEMUS also provides several other exclusive products to its insurance telematics clients

Four insurer UBI / PAYD business models UK, Germany, Italy & France



- 12 year-customer lifetime
- With local inputs, outputs, calculations and charts
- Revenues, costs, cash flow & NPV per customer
- Hand-over session to client and availability for questions afterwards

Global register of UBI /PAYD trials & launches



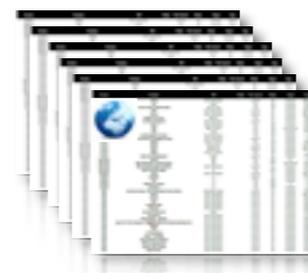
- Over 115 trials and launches (approx. 100 insurers) currently listed
- Europe, North America, South Africa, Japan
- 11 fields: Country, Company, TSP (when available or non-confidential), Trial / Launch, Status (On/Off), Target (Personal/Commercial), Type (PAYD, PHYD, Safety, Security), Device (OBD/Fixed), Estimated customers, Start date
- Excel file

UBI / PAYD market model US-Europe 2010-2020



- Bottom up model for the US, France, Germany, Italy, UK, Rest of EU, Russia, Rest of Europe
- Market size for Insurers, TSPs, TTPs, OEMs and MNOs
- With inputs, outputs, calculations and charts
- Over 1 500 lines
- Hand-over session to client and availability for questions afterwards

Global register of insurance telematics trials & launches - Subscription service



- Same features as above
- Excel file updated every 6 months with new trials & launches
- Minimum 3-year subscription
- Geographic coverage to expand to emerging markets

A PTOLEMUS client is a satisfied client



“Octo Telematics is probably the best informed UBI solution provider globally.

However, we decided to purchase **PTOLEMUS’ Insurance Telematics Study**, which analyses this market in an **unprecedented breadth and depth**.

We believe it is a **must-read guide for any insurer or supplier** that is serious about its insurance telematics plans.”

Giampiero Luccitti
Director of Corporate Development
Octo Telematics



“Danlaw serves many insurers in North America; yet, to continue our growth, we need to penetrate other markets. As a 300 person engineering company with scant marketing resources, we rely heavily on external research.

The Global Insurance Telematics Study provides **the most comprehensive analysis of the trends, players, devices, and potential**.

We will align and prioritize our staffing, research, and partnership agreements accordingly.

Worth every Euro.”

Mike Carroll
VP Sales, Telematics
Danlaw, Inc.

This strategic analysis can help insurers, OEMs, TSPs make Insurance Telematics a reality



**Bridging the gap
between ideas
and realities**

- **It addresses all sides of the subject,** from the business model to the technology and privacy issues
- It looks at the issues from underwriters' perspective but also from the OEM's, the TSP's and the government sides
- **This report provides you the way to**
 - Leverage the learnings from 10 years and over 100 experiments worldwide
 - Get the complete story: strategy, marketing, business model, technical, legal, etc.
 - Make decisions swiftly based on verified facts & figures

PTOLEMUS Consulting Group
Strategies for Mobile Companies

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